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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,011	07/21/2004	Denise Hall	056258-5070	8454
9629	7590	05/02/2006	EXAMINER	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			SHAH, MANISH S	
			ART UNIT	PAPER NUMBER
			2853	

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b> 10/502,011	<b>Applicant(s)</b> HALL ET AL.	
	<b>Examiner</b> Manish S. Shah	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/21; 11/16/04</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

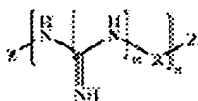
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al. (# US 4559058) in view of Lavery et al. (# WO 00/37258).

Bennett et al. discloses a process for forming a chain extended thermoplastic polymer (a precondensate) includes reacting mono or polyfunctional primary or secondary amine with cyanamide, guanidine or biguanidine and an epihalohydrine and water soluble polymer (a prepolymer having a salt compound and a chain extender having at least two group able to react with the nucleophilic groups) (see Abstract; see Examples 1-4; column: 1, line: 5-30). They also disclose that the reaction is carried out at a temperature from room temperature to 100 °C (column: 2, line: 44-50). They also disclose that the process is carried upon a substrate on which dyeing or printing process including any necessary fixing steps (column: 3, line: 45-56).

Bennett et al. differs from the claim of the present invention is that a salt of a compound of formula:



Formula (1)

wherein:

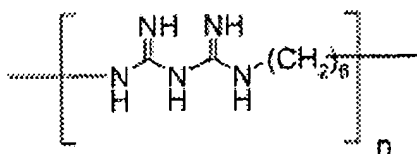
each R independently is a  $C_{1-6}$ -alkylene group;

m is 1 or 2;

n is 1 to 100;

Z is a nucleophilic group; and

Lavery et al. teaches to get the high quality printed image, the fixing solution includes the salt having the formula (page: 3, line: 1-25).



Formula (2)

wherein:

n is from 2 to 40.

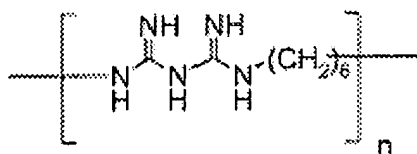
n is preferably from 2 to 30, more preferably from 4 to 15.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the salt of Bennett et al. by the aforementioned teaching of Lavery et al. in order to have a high quality printed image.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lavery et al. (# WO 00/37258) in view of Bennett et al. (# US 4559058).

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Lavery et al. discloses an ink jet printing process including the steps of applying an ink to a substrate by means of an inkjet printer in a localized manner to form an image on the substrate; and applying to the substrate a fixing composition including 0.01 to 50 parts of a chain extended thermoplastic polymer (polymeric biguanide), 50 to 99.8 parts of a liquid medium, which is water or water soluble organic solvent and 0.01 to 50 part of a binder, wherein all parts are by weight and total number of parts is equal to 100; and an ink including a colorant and a liquid medium (see Claim 20; page: 14, line: 1-23). They also disclose that fixing solution includes the salt having the formula (page: 3, line: 1-25).



Formula (2)

wherein:

n is from 2 to 40.

n is preferably from 2 to 30, more preferably from 4 to 15.

Lavery et al. differs from the claim of the present invention is that the a chain extended thermoplastic polymer includes reacting a prepolymer having a salt compound and a chain extender having at least two group able to react with the necleophilic groups; and the reaction is carried out at 0 to 110 °C, wherein the at least two groups able to react with the nucleophilic groups in are selected from isocyanate, epoxide, halide and (meth)acrylate, and nucleophilic end groups are amino groups.

Bennett et al. teaches to get the high quality printed image, with high optical brightness, the chain extended thermoplastic polymer (a precondensate) includes reacting mono or polyfunctional primary or secondary amine with cyanamide, guanidine or biguanidine and an epihalohydrine and water soluble polymer (a prepolymer having a salt compound and a chain extender having at least two group able to react with the nucleophilic groups) (see Abstract; see Examples 1-4; column: 1, line: 5-30). They also disclose that the reaction is carried out at a temperature from room temperature to 100 °C (column: 2, line: 44-50). They also disclose that the process is carried upon a substrate on which dyeing or printing process including any necessary fixing steps (column: 3, line: 45-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the polymer of Lavery et al. by the aforementioned teaching of Bennett et al. in order to have a high quality printed image with high optical brightness.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

4/28/06